Industry causes 'cancer villages' downstream

LANDRY HAARMANN | STAFF WRITER

In China, 320 people drink polluted water everyday. This polluted water is killing off crops and turning flora-rich river towns into "cancer villages."

The increased rates of cancer come from sources unseen in these little towns, which are home to rice patty fields and agriculture. The source is located upstream in areas where heavy mining and industry have allowed heavy metals to run into the rivers.

The water, carried downstream, is used by the village locals for irrigating their crops and drinking.

Associate Professor of political science George Guo said cancer is the result of lax policy and economic drive.

"Power was given to the local government, giving them flexibility (and) resulting in these provinces trying to attract investors," Guo said. "The local governments lowered rent, lowered taxes and lowered standards to attract investment."

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POLLUTION POURS INTO THE ATMOSPHERE FROM FACTORIES IN A VILLAGE IN NORTHERN GUANGDONG PROVINCE

Sophomore Mike Sexton thinks there is a catch-22 to the issue.

"These villages exist due in part to the government stripping the land of trees and mining," Sexton said. "The government is doing this to support their people; and if they don't, people may die."

These cancer villages are not something new. BBC News reported 250 people from Shangba's population of 3,000 have died of cancer since 1987. However, BBC noted the factoid was found in a Chinese newspaper and that statistics in China are often unreliable.

Guo, who visited the Chinese countryside in 2005, said, "The place I visited is still remote, still poor, and there were chemical factories there."

A chemical factory owner even told Guo that these chemicals were cancer-causing agents.

Sophomore Maria Kupper feels the government should be held responsible.

"The government should pay the medical bills of the people who feel sick and should better regulate the water and clean it," Kupper said.

Many of the victim's families, like Shangba native Wang Yan, who lost both her husband and mother to cancer last year, cannot pay for the medical bills.

"The disease destroyed them," Yan told BBC News. "They just got weaker and weaker until they couldn't go on any longer. Now I am left here trying to get by as best I can and look after the children."

He Shouming, an official from Shangba's local Communist Party, said to BBC News, "I have one family of three young children who have lost their mother and father. Our rice crops have failed because of the polluted water. What am I supposed to do? We can't afford to move, so we are stuck here."

Sophomore Kenza Hadj-Moussa feels the government should have regulated the mines better.

"It's every government's role to regulate what they put into the environment, especially when the repercussions are so evident," Hadj-Moussa said.

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CITIZENS FROM THE CANCER VILLAGE OF JIANGSU

According to BBC News, the government has pledged to bring clean water to 160 million farmers by 2010, leaving many more with polluted water.

The pollution is still ongoing, noticeable from a thick red residue at the edge of Shangba riverbanks, according to BBC News.

"Cleaning it up will take years and really we have a huge job on our hands," said scientist Chen Nengchang, who found that rivers had high levels of metal, to BBC News. "We have managed to get the authorities to supply clean drinking water, but there's still a long way to go."

Potomac male smallmouth bass have eggs

KEVIN BRYAN | STAFF WRITER

Male smallmouth bass do not normally create eggs. The United States Geological Study recently found that 80-100 percent of male bass in the Potomac watershed create eggs or have other intersexed characteristics.

In 2003, this percentage was only 25-50 percent. The male smallmouth bass are becoming intersexed. An intersexed fish has the genitals of one sex and attributes of another sex.

USGS and the Fish and Wildlife Service have found the cause to be endocrine disruptors. "Endocrine disruptors are a class of pollutants that are hormonally active, can compete or augment hormonal activity ... minute concentrations can cause problems." said Angie Moore, assistant professor of geology.

Intersexing of animals caused by endocrine disruptors was first noticed with the Lake Apopka alligators. Lake Apopka was a Superfund sight after being contaminated by high levels of DDT and other chemicals. After cleanup, all but trace amounts of those chemicals had been removed. Those trace amounts of chemicals caused changes in the developmental growth of alligators in the region.

The cause of change in the Apopka alligators was readily apparent. Finding which chemical is causing the intersexing of the Potomac bass is more difficult. In October, USGS released a list of 75 possible endocrine disruptors affecting the smallmouth bass.

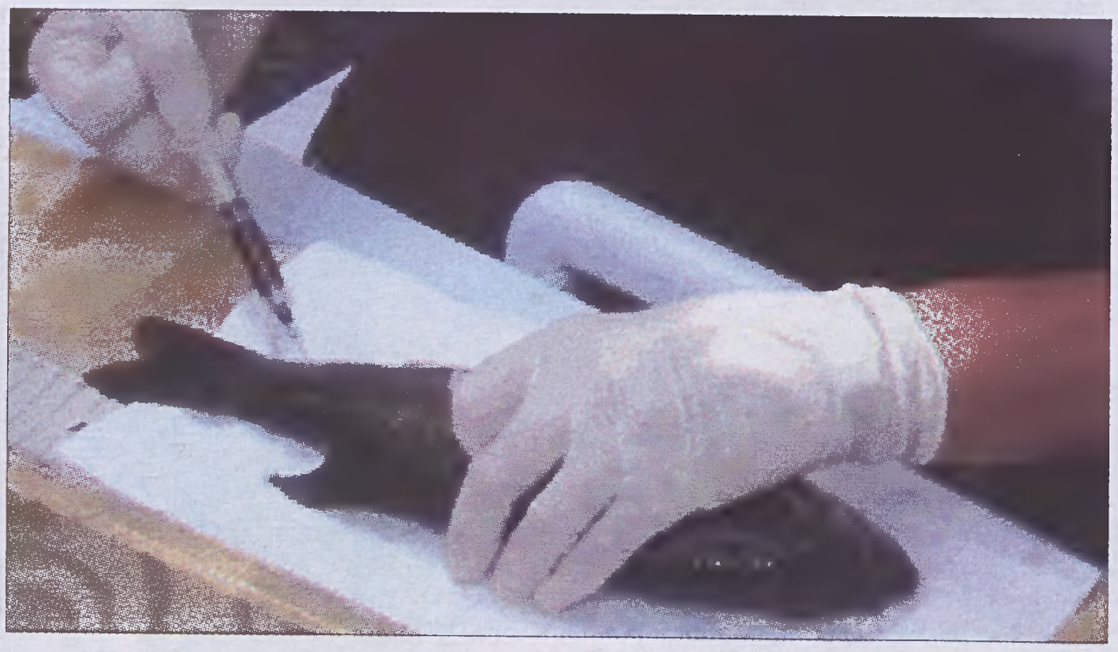
The list includes pharmaceuticals, fertilizers, steroids, industrial chemicals, plastics and insecticides including DDT. It could be individual chemicals causing problems, or it could be mixtures of these chemicals. "The amounts can be detected, but it's very small, how much and when the fish have to be exposed is unknown" said Professor of biology Chuck Smith.

All of these chemicals are found at high enough levels in the Potomac and in other rivers worldwide to conceivably have an effect. Many of the chemicals are not released into the water through carelessness. Pharmaceuticals, both those given to humans and livestock, commonly pass through the body and eventually into the water.

The level of chemicals in the Potomac is considered safe for humans, but many of the chemicals have not been tested on humans, and their long term effects are unknown.

The National Children's Study believes that children may be affected. "It is hypothesized that in utero and early childhood exposures to EDs may be responsible, at least in part, for decreases in semen quality, increasing incidence of congenital malfunctions of the reproductive organs ... increase of testicular cancer, and acceleration of onset of puberty in females."

Further tests are being done, both to identify which chemicals are causing the changes in male smallmouth bass and what possible effects they could have on humans. Most of the endocrine disruptors being studied mimic estrogen. Extensive study on the effects of mimicked testosterone or progesterone, or the intersexing of female fish, has not been done.



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INTERSEXED FISH ARE STUDIED BY SCIENTISTS